

AMENDMENTS TO THE CLAIMS:

This listing of claims replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A double-layer capacitor[[,]] comprising:
[[-]] ~~having at least one~~ a first electrode having a first polarity;
~~(1) and one~~ a second electrode having a second polarity, the first polarity being
different from the second ~~(5) with opposite polarity; and~~[[,]]
[[-]] ~~having~~ an electrolyte ~~(20), which~~ that is in contact with the first electrode and
the second electrode ~~electrodes (1, 5),~~
[[-]] wherein the first electrode has a first charge of the first polarity and the second
electrode has a second charge of the second polarity, and wherein maximum values of the
first charge and the second charge are substantially equal ~~maximum charges of the first and~~
~~second electrode, which are dependent on the polarity of the electrodes, are matched to one~~
~~another.~~

2. (Currently Amended) A double-layer capacitor[[,]] comprising:
[[-]] ~~having at least one~~ a first electrode having a first polarity;
~~(1) and one~~ a second electrode ~~(5) with opposite~~ having a second polarity, the first
polarity being different from the second polarity; and

[[-]] ~~having~~ an electrolyte (20), ~~which that~~ is in contact with the first electrode and the second electrode; electrodes (1, 5),

[[-]] wherein the first and second electrodes have first and second surfaces, respectively, the first and second surfaces being different ~~with opposite polarity have different capacitance forming surfaces.~~

3. (Currently Amended) The double-layer capacitor of claim 2 according to the ~~preceding claim,~~ [[-]] wherein the first and second surfaces have electrodes having ~~opposite polarity have surface areas of different sizes.~~

4. (Currently Amended) The double-layer capacitor of claim 2 according to one of ~~claims 2 or 3,~~ [[-]] wherein the ~~electrodes having opposite polarity comprise the~~ first and second surfaces comprise a same ~~electrode materials~~ type of material, and wherein the first and second surfaces have different masses.

5. (Currently Amended) The double-layer capacitor of claim 2, wherein a ~~according to one of the preceding claims 2 to 4,~~ in which the product of

$$Q_{V, \max}^+ V^+ = Q_{V, \max}^- V^-$$

is approximately equal for ~~both~~ the first and second electrodes, where Q corresponds to electrode charge and V corresponds to electrode volume.

6. (Currently Amended) The double-layer capacitor of claim 2 according to one of the preceding claims 2 to 5, [[-]] wherein the first electrode and second electrode comprise the a same type of electrode material; and [[,]]

[[-]] ~~in which the~~ wherein a product of

$$Q_{M, \max}^+ M^+ = Q_{M, \max}^- M^-$$

is approximately equal for ~~both~~ the first and second electrodes, where Q corresponds to electrode charge and M corresponds to electrode mass.

7. (Currently Amended) The double-layer capacitor of claim 2 according to one of the preceding claims 2 to 6, [[-]] wherein at least one of the first and second electrodes comprises carbon.

8. (Currently Amended) The double-layer capacitor of claim 2 according to the preceding claim, [[-]] wherein at least one of the first and second electrodes comprises: the electrode is selected from a group of the following electrode materials: a) carbon powder, b) carbon fabrics, e) de-metallized metal carbides, d) carbon aerogels, e) graphitic carbon, f) nanostructured carbon, and g) PVD and/or CVD carbon.

9. (Currently Amended) The double-layer capacitor of claim 2 according to one of the preceding claims 2 to 8, [[-]] wherein at least one of the first and second electrodes is ~~selected from a group consisting of~~ comprises a conductive polymer polymers, a conductive ceramic, a metal, ceramics and metals or a metal alloy; alloys, and wherein the first and second electrodes have differently sized surfaces ~~has a large surface.~~

10. (Currently Amended) The double-layer capacitor of claim 2 according to one of the preceding claims 2 to 9, [[-]] wherein the electrolyte comprises at least one of is ~~selected from among:~~ a gel electrolyte, a polymer electrolyte, and a liquid gel electrolyte.

11. (Currently Amended) The double-layer capacitor of claim 2 according to one of claims 2 to 9, [[-]] wherein the electrolyte ~~is an electrolyte~~ comprises a solution comprising organic and/or aqueous solvents[[,]]; and

[[-]] wherein the double-layer capacitor further comprises:

a separator ~~is disposed~~ between the first and second electrodes.

12. (Currently Amended) The double-layer capacitor of claim 11 according to the preceding claim, [[-]] wherein the separator comprises paper, polymer membranes, or glass fibers.

13. (Currently Amended) The double-layer capacitor of claim 2 ~~according to one of the preceding claims 2 to 12, [[-]]~~ wherein ~~both~~ the first and second electrodes are structured as layers, forming a layer stack of alternating first and second electrode layers with separators disposed between them are stacked; and

wherein the double-layer capacitor comprises at least one separator between the first and second electrode layers.

14. (Currently Amended) The double-layer capacitor of ~~according to the preceding claim 13, [[-]]~~ wherein the stack ~~is rolled into~~ defines a coil.

15. (Currently Amended) A pseudo-capacitor comprising the double-layer capacitor of claim 2; ~~according to one of the preceding claims 2 to 14, formed as a pseudo-capacitor;~~

[[-]] wherein the ~~two~~ at least one of the first and second electrodes ~~are~~ comprises either metal oxide ~~oxides~~ or conductive polymer ~~polymers~~.

16. (Currently Amended) ~~Use of a double layer capacitor according to one of the preceding claims in~~ A capacitor battery comprising the double-layer capacitor of claim 2.

17. (Currently Amended) A method for ~~of~~ reducing ~~the~~ a difference between the different maximum charges of a first electrode and a second electrode of a double-layer

capacitor, the first and second electrodes comprising an electrode material, the method comprising electrode with opposite charge, having the method steps:

[[A)]] ~~the obtaining a non-corrosion~~[[-free]] potential range of the electrode material ~~is determined~~ relative to a reference electrode;

[[B)]] ~~the obtaining maximum charge charges~~ of the first and second electrodes relative the reference electrode, the maximum charges being within electrode, which is part of the respective limits of the non-corrosion[[-free]] potential range, ~~is determined relative to the reference electrode; and~~

[[C)]] ~~then adjusting~~ the maximum charges so that the maximum charges are closer in magnitude of the two electrodes are matched.

18. (Currently Amended) The method of claim 17 according to the preceding claim, [[-]] wherein, in method step A), obtaining the non-corrosion potential range comprises:

obtaining a difference in potential difference between the two first and second electrodes and the reference electrode; and is set, after which a measurement of the

measuring a corrosion current between the first electrode and the second electrode, as counter electrode, at the set potential difference; and[[, is performed.]]

[[-]] wherein, ~~in method step B), obtaining the maximum charges comprises using the second electrode as counter electrode, the integrating current charge that has flowed~~

into the first electrode to obtain first and second potentials until attainment of the upper critical limit potential; and determined by integration the charge current, and the same process is repeated for the lower critical limit potential.

19. (Currently Amended) The method of claim 17 according to one of claims 17 or 18, [[-]] wherein, in method step C), the adjusting comprises increasing a size of a surface of an that electrode whose having a lowest maximum charge is lower is increased.

20. (Currently Amended) The method of claim 17 according to claims 17 to 19, [[-]] wherein, in method steps A) and B), the same electrode material with the same dimensions is used for the first and second electrodes comprise a same material and have same dimensions when the non-corrosion potential range is obtained and when the maximum charges are obtained; and electrode,

[[-]] wherein adjusting comprises increasing in method step C), the a mass of that an electrode having the lower a lowest maximum charge is increased.

21. (Currently Amended) The method of claim 17 according to one of claims 17 to 19, [[-]] wherein, during adjusting in method step C), the a product of

$$Q_{V, \max}^+ V^+ = Q_{V, \max}^- V^- \text{ or } Q_{M, \max}^+ M^+ = Q_{M, \max}^- M^-$$

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is ~~set to be~~ approximately equal for ~~both~~ the first and second electrodes, where Q
corresponds to electrode charge, V corresponds to electrode volume, and M corresponds to
electrode mass.